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FURTHER RECORDS OF NEOTROPICAL TABANIDAE  
(DIPTERA) MOSTLY FROM PERU

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A previous report (Philip, 1958) provided records and descriptions of species taken chiefly by a California Academy of Sciences expedition to the west coast of South America. The present is a supplemental report on material taken in part by Drs. E. S. Ross and E. I. Schlinger on a subsequent trip in 1954-55. Many of the records below, referred to simply as Tingo Maria, were by these collectors from Monson Valley, Peru. Again, it will be evident that studies of types in European museums<sup>1</sup> as well as comments generously offered by Drs. G. B. Fairehild and I. M. Mackerras, facilitated many nomenclatural decisions. The following abbreviations are used: BMNH for British Museum (Natural History), Paris for Museum National d'Histoire Naturelle, Paris, VNM for Vienna Naturhistorisches Museum, Turin for University of Turin Museum, CAS for California Academy of Sciences, and AMNH for American Museum of Natural History. Collections of L. L. Pechuman, G. B. Fairehild, and the author are indicated by respective initials.

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1. Travel was supported by grants in 1953 from the American Philosophical Society and in 1958 by the Marsh Fund of the National Academy of Sciences.

**Scaptia grisea** (Jaennicke).

On the basis of study of the types in Seckenberg Museum, Frankfurt, which I also saw, Kroeber (1930b) correctly synonymized this and *S. jucunda* (Jaennicke) from Chile, though the latter originally had page priority. On the basis of the description, I had considered this to be the intermediate form of the following *S. atra*, but comparison of specimens reveals minor but distinctive differences in *S. grisea* of which I have not seen other examples.

The respective types, and paratypes labelled "von Hayden" and "Valparaiso, Bayerhoffer" do not reveal on what basis the describer separated these two names. But Kroeber's selection of *S. grisea* will stand under the Rules as the correct name, though only "*jucunda*" carries Jaennicke's hand-written label. The fronts of these are wider (index 1:1.8) than in *S. albithorax* (Maequart), and are more divergent basally than my *S. atra* (*leucothorax*) specimens, while the snouts are definitely more produced than in any of my series and there are more pale hairs basally on the abdomen. The palpi, however, are the same in both. Cell  $R_5$  is narrowed but not closed in any of the types of *S. grisea* (*jucundus*). It appears probable that additional specimens will turn up to confirm this as a separate species.

On the other hand, Professor I. M. Mackerras has indicated that *S. limbithorax* (Maequart), which Kroeber (*op. cit.*) assumed was a related Neotropical species described from *patria ignota*, should actually apply to a New South Wales species with practically parallel frons, of which he loaned me a specimen.

**Scaptia atra** (Philippi).

Kroeber (1934) did not recognize this Chilean species and placed it with question under *Esenbeckia*. The black body, but ash-gray front and pale hairs behind the head and on mid and hind tibiae, leave little doubt that this is the melanistic extreme of Chilean specimens previously assigned to the much paler *Listrappa* (= *Scaptia*) *leucothorax* (Ricardo). Complete intergradation occurs without morphological differentiation.

In a series of one male and seventeen females in CAS, there is complete intergradation from the dark *S. atra* through specimens with mixed black and white to completely white notal vestiture that encroaches on the pleura in combination with either black or white (or mixed) beards. A study of variants on a geographic basis would have to be made with adequate series to determine if available names could be applied as subspecies. While *S. atra* was described with closed first posterior cell, this is variable even on different wings of the same specimen in the series studied. This character is observed to vary in certain other species of *Scaptia* in Chile.

The male of *S. atra* has not previously been described.

ALLOTYPE ♂, 14 mm. Readily associated with females having entire notum and scutellum and upper occiput white-haired; white hairs on squamae and the basal third of middle tibia, but strangely enough the hind tibia is entirely black-haired like the remainder of the insect including its face. Apical palpal segment cylindrical in basal half with flattened outer face in the distal half. Proboscis shorter than thorax. Cell  $R_5$  narrowed but not closed. No spur vein.

"L. Verde, X. 1937, Chile, Dr. Reed." In CAS.

### ***Veprius presbiter* Rondani.**

An examination of the recently discovered type, loaned through courtesy of Professor Mario Salfi of the University of Naples, reveals that this species, for which the genus is monotypic, has long been misidentified. This name was recently synonymized with *Tabanus carbo* Macquart by Fairchild (1956). Mackerras (1955) had reassigned *Veprius* as a subgenus of *Mesomyia* in the Tribe Bonvieromyini of the Chrysopinae on the basis of similarly misidentified specimens supplied by the writer.

The type is moldy but recognizable as the male of the later-described *Chaetopalpus coracinus* (Philippi) from Chile, a species which, after Philippi's time, was shown to be congeneric with "*Tabanus ?*" *annulicornis* Philippi. In describing the latter with question under *Tabanus*, Philippi (1865) made the peculiar statement that he had considered proposing the genus *Chaetopalpus* for this but changed his mind; however, the name has since been accepted for both of the above species. The doubt concerning validity of this generic name is now not of consequence since *Veprius* becomes the prior name. However, this requires radical transfer of *Veprius* to the Tribe Pangoniini in the Pangoniinae as revised by Mackerras (1954) and leaves *Mesomyia carbo*, new combination, without needed subgeneric assignment; a new subgenus is proposed below.

Since the name *Veprius* was derived from the Latin for "thorn bush," it is also more appropriately applied to the shaggier species in *Chaetopalpus* (as might have been suspected) than to *M. carbo*. Philippi alluded to the different, fiery-red eyes when he described *C. coracinus*.

### ***Mesomyia (Coracella)* Philip, new subgenus.**

SUBGENOTYPE *Mesomyia (Coracella) carbo* (Macquart).

The subgeneric characters can be quoted from Mackerras (1955, "subgenus *Veprius*") "banded eyes, which are only faintly hairy, shining subcallus and face, unenlarged first antennal segment, and broadly *Tabanus*-like habitus." The eyes (relaxed) show a brown band on a bright green ground (though Philippi described them as "fiery red" in life) and the hairs are

visible only under magnification higher than that of a hand lens. There is no postocular rim and frontal callosities of females are keel-like.

The Australian subgenus *Vepricella* Mackerras has some characters in common. A specimen of the subgenotype *M. (V.) frontalis* (Ricardo) is available through kindness of Dr. Mackerras. It differs in having a definite postocular rim, entirely pollinose subcallus and face, bare eyes with coloration reversed with two blue or green bands, frontal callosity quadrate and touching the eyes, and clear wings. Mackerras describes the style of *Vepricella* male genitalia as more slender and with a "projecting, subapical ventral lobe" not present in "*Veprius*" (= *Coracella*).

A specimen of each sex of *M. carbo* in the writer's collection is dusted with plant pollen which reveals flower-visiting habits. Both sexes of *M. rubricornis* (Krober), new combination, from Chile are also available which enables description of the previously unknown female. The male agrees closely with the type in BMNH compared by me in 1953. Except for the bright orange-red flagellums, the two species look very much alike. However, the subcallus and face here are entirely dull, blackish brown pollinose in both sexes, so that the subshiny condition in *M. carbo* is only of specific value. The eye coloration and microscopic hairs are the same for both species.

*Mesomyia (Coracella) rubricornis* (Krober), allotype ♀, 15 mm. Compared to *M. carbo*, the bright orange antennal plates are larger and as tall as long, disc-like, the first three annuli are also orange, the apical one blackish-brown. The frontal callosity is black and much narrower, only a little widened below, and reaches upward nearly to the anterior ocellus. The notum has a dull, dark-bluish sheen with three narrow blackish stripes. Most cells of the wings have hyaline streaks as also seen in some *M. carbo*.

Angol, Chile, 8 December, 1956. T. Garcia. In collection CBP.

I do not know the third species from Chile, *Mesomyia (Coracella) rufopilosus* (Bigot), new combination, which Fairehild (1956), following Krober (1934), also placed in "*Veprius*" and described as having "hind tibial spurs, bare subepaulet and subcosta, fleshy labella, and pilose holoptic eyes." The wings are described as nearly clear.

### **Esenbeckia schlingeri** Philip, new species.

A robust species of the "*translucens*" group with thorax and most appendages yellow, but abdomen and femora dark.

HOLOTYPE ♀, 16.5 mm. Eyes bare. Front yellow pollinose with darker central stripe from vertex to base which margins a narrow yellow keel and expands to envelop most of the subcallus above antennae (index 1:3.3); face and cheeks of same sooty-brown pollinosity. Beard straw yellow with sparse black hairs along ocular margins and in sutures on either side of the anten-



nae, and on both palpal segments. Antennae and palpi yellow, the former of usual shape and with black hairs basally, but the terminal annulus unusually attenuated, longer than in either *E. translucens* Macquart or *E. chagresensis* Fairchild. Apical palpal segments more slender than in either of those species, and proboscis relatively longer, palpi a little less than half its length (again showing difficulties of recognizing *Ricardoia*). Theca and labellae sclerotized, rather slender, the former not thickened as in *Proboscoides*.

Thorax and scutellum yellowish-brown, covered with short, fine, pale hairs. Pleura, coxae, and femora dark, smoky brown, entirely black-haired. Tibiae and tarsi yellow with short black hairs. Wings yellow fumose, especially anteriorly; cell  $R_5$  closed at the margin, spur veins longer than stems. Subepaulets bare.

Abdomen with tergite 1 yellow-brown pollinose, concolorous with thorax; remainder of tergites subshiny, chocolate brown with blackish incisures from tergite 3 caudad, covered with sparse black hairs except for pale ones narrowly on the incisures. Venter similar, but colors more intense, making the yellow first sternite more contrasting to the almost blackish remainder.

"Peru: Monson Valley, Tingo Maria, XI-29-1954. E. I. Schlinger and E. S. Ross." In CAS.

Paratypes, 2 females, same data but 28 September and 21 October, in close agreement. In CAS and collection CBP.

The longer proboscis, relatively shorter and more slender palpi, black hairs on facial sutures, basal palpal segments, chest and coxae, and lack of black hairs on notum and scutellum differentiate this from both *E. translucens* and *E. chagresensis*; the latter also has more conspicuous pale incisures on the abdomen, and tibiae are darker. *E. translucens* has a more prominent frontal callosity, and labellae are larger, and more fleshy along the lower margin.

Study of the type of *E. diaphana* (Schiner) from Colombia in VNM proves it to relate more closely to the slender *illota* group than to the above species. The following *E. ecuadorensis* Lutz and Castro has more strikingly banded abdomen and different proboscis.

#### ***Esenbeckia ecuadorensis* Lutz and Castro.**

Five females of this species in University of Michigan Museum of Zoology are labeled "Ecuador: nr Quevada Los Rios Prov., V-VI-1955, F. L. O'Rourke." Mouth parts are slender, but rigid, theca and labella sclerotized but more slender than in *Proboscoides*.

#### ***Esenbeckia gertschi* Philip**

Since description of this species (1954), a female has been found in

AMNH collections bearing the same data as the holotype male. It is readily associated with the sharply-dark, extreme bases of the wings, reddish, yellow-haired, short palpi, bicolored legs, and predominantly yellow-haired abdomen of the holotype.

ALLOTYPE ♀, 17 mm. Frons and subcallus buff-pollinose (including the well-outlined keel), parallel in upper half, moderately divergent below, index 1:2.9, though the upper portion gives frons a narrower appearance. Face brown, thinly dusted with yellow pollen, slightly swollen under antennae. Latter reddish-orange, inconspicuous yellow hairs on first two segments, the terminal annulus much elongated. Palpi slender, acuminate, about one-third length of proboscis, the broad bare areas on sides occupying about two thirds their lengths. Beard and thoracic vestiture straw yellow.

Notum, scutellum, and pleura blackish, unlined; narrowly reddish above wing bases and antealar tubercles. Femora blackish, tibiae reddish, each with concolorous hairs. Wings subhyaline with yellow costal cells, but sharply deep brown basad of the humeral cross vein and in cell first M. Allula subhyaline and venation as in holotype. Abdomen entirely yellow-haired. Tergite 1 dull reddish-yellow pollinose; remainder of abdomen subshiny, broadly deep reddish on sides of tergite 2, and grading into blackish-brown behind and on the venter.

"6 mi. N. E. El Salto Dgo. Dist., Dgo. Mex. 8500 ft. August 10, 1947. D. Rockefeller Exp., Gertsch." In AMNH.

In key to females (Philip, 1954) this would run to couplet 6 where it separates on dark halteres, and dark but yellow-haired abdomen. This is a much more robust species than either *E. tepicana* or *E. abata* also in couplet 6.

An equally robust, somewhat similar-appearing female was taken at the same time and place but differs in lack of basal wing infuscation, narrower front, less divergent below, entirely dark legs with black hairs on tibiae and abdominal segments from 3 caudad. This female agrees with a syntype of *E. seminuda* Coquillett and with the type of *E. nigronotata* Macquart in Paris Museum as discussed by Philip (1954).

#### ***Proboscoides fairchildi* Philip.**

A female was taken by Schlinger and Ross at Yurac near Tingo Maria, 16 November, 1954.

#### ***Triceratomyia mcintyreii* Bequaert.**

A female of this peculiar *Fidena*-like species with long triramous antennae was taken by Schlinger and Ross in Ecuador "N. of Puyo, Napo-Pastaza, 253 m., 9 Feb., 1955." Subepaulets and eyes are bare.

**Chrysops laeta sublaeta** Philip.

Twenty-nine females were taken by Schlinger and Ross at Tingo Maria on various dates from 23 September to 9 December, 1954, plus one near Puyo, Napo-Pastaza, Ecuador, 953 m., 9 February, 1955. These all have the characteristic heavy wing pattern with straight outer margin of the crossband beyond discal cell, and apical spot connected and sometimes even filling cell  $R_1$ . The yellow marking on tergite 2 is hourglass-shaped, and that on tergite 3 usually crosses the segment. However, all but one have yellow frontal and facial callosities, the former with a narrow to rather wide, dark, upper margin; in one, the entire disc is dull brown. It appears, therefore, that the important character differentiating *C. l. sublaeta* from the typical form (see Philip, 1955) is the heavier wing pattern, but that the color of the callosities is variable.

**Chrysops leucospila** Wiedemann.

Nine females, which show little variation, were also taken at Tingo Maria between 10 October and 23 December. All have small yellow triangles on tergites 2 to 4 but in two specimens there is an additional smaller spot on tergite 5, and in one, the triangle is present only on tergite 2. The type seen by the author in 1953 in VNM is dirty, which condition obscures the abdominal triangles. Otherwise a specimen from Goyaz, Annapolis, Brabil, agrees with this as well as with the type of synonym *C. guttula* Wiedemann also in VNM.

**Chrysops calogastra** Schiner.

A female from Tingo Maria, 11 November, only 6 mm. in length, differs from a Canal Zone specimen compared by the author with the type in VNM only in having heavier wing and abdominal patterns and dark margins on the facial sutures and apodemal pits. Apical spot around the apex of wing is but little paler than crossband, basal infuscation in the respective basal cells occupies a little less than half of the first and nearly a third of the second cells, and the median, equilateral triangle on tergite 2 does not reach half way across segment. The pleura are entirely plumbeous without the golden patches beneath the wing bases. This represents a melanistic variant of *C. calogastra*.

Another female from Tingo Maria in the same month is obviously related to the above in the extensive apical spot but differs in the following critical characters.

**Chrysops rossi** Philip, new species.

A small, predominantly blackish species with a row of very small yellow

triangles on tergites 2 to 4; apical spot extends around apex of wing and the infuscation of both basal cells occupies more than half their lengths.

HOLOTYPE ♀, 7.5 mm. Eyes (relaxed) with very heavy dark pattern, only median frontal spot not contiguous to ocular margin, shaft and upper frontal spots joined at vertex, arrowhead broadly joined to median spot, and possibly to lower occipital margin (indistinct on revival). Frons taller than broad, yellow pollinose, a transverse black spot at vertex surrounding the three ocelli, callosity broad and shallow, yellow on disc, upper margin brown. Face, bare protuberant, yellow-orange. Lateral pollinose stripes reaching bases of palpi. Cheeks bare, reddish-brown, darker behind. Antennae thin, reddish, style almost black; basal annulus subequal to pedicel in length, scape a third longer than either. Palpi reddish.

Thorax and scutellum entirely subshiny black, thinly dusted anteriorly with plumbeous pollen, and with golden pollen in a small spot on pleura under wing bases. Sparse, short, black hair with a few inconspicuous appressed yellow ones on notum. Coxae also subshiny black, which color extends onto bases of first two pairs of femora, and two thirds of hind pair; two hind pairs of tibiae blackish, tarsi mostly pale, straw yellow; remainder of legs dull reddish brown. Wings with pattern as in the melanistic *C. calogastra* above, infuscation intense, apical spot a little less so and encircles entire apex of wing and leaves hyaline "sickle" broken but with a connected spot across vein  $R_{2+3}$ , a round spot below fork in cell  $R_5$ , and another in cell  $M_1$ ; the small spots at outer and inner ends of quadrate spot at fork seen in *C. calogastra* are missing here so that crossband and apical spot are broadly joined across fork; apical margin of cell  $M_2$  is smoky, crossband fills cell  $M_3$  to margin and most of cell  $CU_1$  except for a small triangular spot along anterior margin; two basal cells predominantly infuscated with about a third of each hyaline toward the tips, anal cell a little less than half infuscated apically, and anal area smoky. Halteres black.

Abdomen, including ineisures subshiny black with small yellow spots on extreme upper, outer corners of tergites 1 and 2, a small yellow taller-than-broad triangle on hind margin of tergite 2, reaching less than a third of the way across, and a smaller inconspicuous one on 3 and 4. Sternite 1 and anterior margin of 2 yellow. Remainder of venter black and black-haired with inconspicuous sparse yellow hairs caudad.

Peru: Monson Valley, Tingo Maria, 23 November, 1954, Schlinger and Ross. In CAS.

The much darker, heavier body and wing patterns, especially in the basal cells, make it unlikely that this is merely a melanistic variant of *C. calogastra* though the relationship is obvious.

**Stenotabanus pequiensis** Fairchild.

This and the similar *S. xenium* Fairchild, belong to the anomalous group which is intermediate with *Tabanus* because of some setae on the subepaulets, but with otherwise *Stenotabanus*-like facies.

Seven females of this and five of *S. xenium* were taken by Schlinger and Ross at Tingo Maria between 18 September and 2 December. Another specimen of the latter in AMNH was taken on 3 June, 1939, at Huauco, Tingo Maria, by Wyotkoski.

**Stenotabanus obscurus** Kroeber.

The type from Venezuela is intact in VNM and I have a specimen from Ecuador in close agreement except for somewhat taller frontal callosity. Another specimen from Ecuador agrees structurally, but also agrees with Kroeber's (1929) variety of *S. flavofemoratus* from Peru with more reddish femora, style and abdomen. Specimens from one locality in Bolivia show similar variation but in two, the middorsal expansion of the pale incisure on tergite 2 plainly crosses the tergite, though such spots are indefinite on the following tergites.

Similar variation and intergradation occur among 40 females taken 18 September to 3 November, 1954, in Tingo Maria, except that at most there is only an indistinct pale-haired triangle in the middle of tergite 2. In ten of the darkest variants, the abdomen, style, and halteres are almost black. The remainder could be assigned to variety *S. flavofemoratus* though gradations in color are a matter of degree or intensity with the palest forms having entirely red antennae and legs, and pale-brown halteres. All are structurally alike except the frontal indexes vary between 1:4 and 1:5.3. Kroeber describes the type of *S. obscurus* as about 1:3.5, but I measured it at 1:4. Though Kroeber keys the species with wings absolutely hyaline, there is perceptible tinting anteriorly in the type, as well as in most of this series of specimens. Eyes have two green bands on a purple ground in relaxed specimens.

**Stenotabanus taeniotes** (Wiedemann).

This genotype is representative of several later-described species that have a prominent, pale middorsal stripe on reddish to brown abdomens. The validity of such species as *S. pallipes* Kroeber with its slightly wider front, and *S. pseudotaeniotes* Kroeber will depend on variation found in adequate series. Kroeber (1929) overlooked the relationship here of *S. fulvistriatus* (Hine) from Central America. There is also confusion regarding identity of the type of *S. taeniotes*, whether in Vienna or Frankfurt. Until this confu-



sion regarding variation can be resolved, it appears best to assign the oldest name to a series of 8 males and 14 females taken at Tingo Maria between 21 October and 11 December, 1954. The frontal indexes of the females vary between 1:2.9 and 1:3.3, the femora and style may be entirely red or with brownish shades, and upper margin of callosity may be tridentate, squared, or rounded.

Two syntypes, labeled type and paratype, "Brasilia, Freireiss," "56," were seen in Frankfurt and Dr. Eli Franz has written that Wiedemann's type series originated from the Senekenberg Museum, so that the specimen in VNM labeled "taeniotes" in his handwriting, but not type contrary to Kroeber (1929), could have been from the original series. To remove any doubt on this important species, genotype of *Stenotabanus*, the intact Frankfurt specimen labeled "type," subsequent to Wiedemann, is herewith designated as lectotype; frons is slightly convergent below, index 1:5.75.

### ***Stenotabanus albilinearis* Philip, new species.**

A slender, blackish species with single white serrated line on the abdomen, metallic brassy hairs on thorax, dark red antennae, bicolored legs, and dark brown to blackish palpi.

HOLOTYPE ♀, 9.0 mm. and wings 9.0 mm. Eyes bare with two green bands on a purple ground (relaxed). Frons slightly widened above (index 1:4.0), yellow pollinose with two wide blackish bands, one at vertex which surrounds a small, low subshiny tubercle with vestigial anterior ocellus; basal callosity smooth, rather protuberant, piecous, a little taller than broad and touching eye margins its full length, tridentate at top, middle prong extended upward as a narrow median keel two-thirds the height of frons. Subcallus buff-pollinose above, with a brown band below which crosses on either side of the antennae onto upper corners of cheeks. The latter and face creamy-pollinose, beard concolorous, short, sparse. Antennae dark brick-red with black hairs on basal segments, plate with a low, obtuse, dorsal angle basally, and a little longer than style. Palpi dirty brownish, first segment almost black, entirely black-haired; but little shorter than proboscis.

Thorax and scutellum black, unlined but with narrow pale margins above wing bases, notum covered with indistinct, short, black hairs and sparse, appressed, brassy hairs. A black line margins notum across tubercle in front of each wing. Pleura broadly creamy-pollinose and pilose above, darker below and on chest. Coxae and femora black. Tibiae bright straw-yellow to whitish, but black on the distal halves of fore pairs, and on tips of two hind pairs, vestiture concolorous. Wings tinted with a distinct apical cloud beyond stigma; cell  $R_5$  wide open, short spurs present. Halteres blackish, subepaulets bare.

Abdomen black, the median whitish line to fifth segment composed of narrow, truncated triangles, apices of those on tergites 4 and 5 just reaching anterior margins. Incisures of all but first two tergites and of all sternites narrowly whitish. Sternite 2 with a brownish cast and wider suffusion of pale hairs behind.

Peru: Monson Valley, Tingo Maria, 10 October, 1954, Schlinger and Ross. In CAS.

PARATYPES ♀'s: 5, same data except dates between 21 October and 2 December, 1954. In CAS, and collections CBP and GBF. In close agreement, frontal indexes vary between 1:3.7 to 1:4.3 with mean of 1:3.9, callosity may be rounded across top, and palpi may be almost black. The combination of dark palpi, red antennae, trianguliferous line on black abdomen, and brassy-haired thorax is distinctive. *S. obscuremarginatus* Krober of Brazil has discontinuous triangles on a browner abdomen, paler fore coxae and palpi, antennae darkened apically, and a wider frons.

### ***Stenotabanus sexannulatus* (Enderlein).**

This contrastingly patterned, small, compact insect was made the genotype of the unnecessary *Styposclaga* Enderlein. A female from Yurac, 67 miles east of Tingo Maria, 16 November, 1954, permits some additional notes. Notum and scutellum are densely covered with appressed, iridescent, greenish and silver, scalelike hairs. Scutellar integument is gray apically with intermixed white hairs best seen from the side. Frontal index 1:4.0 and there is a quadrate, shining black spot across the vertex enclosing a low tubercle with three vestigial ocelli. The incisural band on tergite 2 widens to a low triangle which reaches only half way across the segment.

Another female from Monson Valley, Tingo Maria, 29 November, 1955, is obviously a melanistic variant. Palpi and pleura are blackish, beard is mixed black and yellow, and incisural bands are a little narrower. Frons is a little wider, index 1:3.7 and the spot at the vertex is smaller.

It appears highly probable that *T. incipiens* Walker from Amazonas, Brazil, is an earlier name, and the headless type in BMNH agrees with the first specimen above. *Stenotabanus maculifrons* Hine from Guatemala cannot be separated by the description and will need type comparison to decide on synonymy.

### ***Stenotabanus macroceras* Philip, new species.**

Opportunity is provided here to describe another distinctive South American species from Venezuela. This is slender with dark thorax, reddish-brown abdomen, unusually elongate antennae, and tinted wings with faint clouds and short spur veins at forks.

HOLOTYPE ♀, body 9 mm., wings 10.5 mm. Eyes ostensibly bare. Frons with parallel sides (index 1:4.0), brown pollinose with a small dark spot at vertex but no vestigial ocelli; basal callosity brownish black, protuberant, triangulate in shape due to a broadly tapered point less than half way to vertex and no median line above. Subcallus pale brown, paler above. Face and cheeks gray pollinose, beard short, sparse, whitish. Antennae reddish basally with black hairs, black beyond the low, but sharp dorsal tooth which is situated on basal fourth of plate, the latter unusually long and slender, twice as long as style which is also a third longer than two basal segments combined; whole structure is subequal to frons in length. Palpi slender, hardly swollen at "knees," blunt-tipped, about two-thirds length of rather long proboscis.

Notum and scutellum blackish, unlined, with sparse brown hairs, and appressed brassy to greenish ones; antalar tubercles pale brown. Pleura and coxae gray pollinose and whitish pilose. Femora and distal half of fore tibiae, and all tarsi dark brown, remainder of legs reddish with pale hairs. Wings tinted, costal cells yellow; cell  $R_5$  wide open. Halteres pale brown. Subepaulets with a few scattering setae.

Abdomen with first four segments reddish-brown, darker caudad, covered with mostly black hairs. Tergites 1 and 2 with small median dark integumental spots and median patches of straw-yellow hairs on incisures; on remaining tergites, similar patches widen along incisures. Venter colored similarly but with predominantly pale hairs and more prominent pale incisures.

Rancho Grande nr. Maracay, Venezuela, 13 May, 1946. In AMNH.

ALLOTYPE ♂, 10 mm. Similar to female except for usual sexual differences, and readily associated. Head a little wider than thorax, enlarged facets brown with sparse short hairs, sharply demarcated in upper two-thirds of eye area, a posterior margin of small facets extends upward but tapers out just before vertex. Tubercle small but visible at eye level. Frontal triangle yellow pollinose, smoky in the apex. Face and cheeks also yellow pollinose with more abundant yellow hairs. Palpi small, ovoid, blunt, about one-half longer than thick. Yellow and metallic brassy hairs on notum longer than in female and a series of dark brown median spots above and below on first four segments of the brighter reddish abdomen, more prominent than in any females.

Same data as holotype, but dated 27 April, 1945. In AMNH.

PARATYPES: ♂ and 4 ♀'s, same data but females dated 5 to 17 May. In CAS and collection CBP. Each sex in close agreement with above. The paratype male lacks median spots on tergites 3 and 4.

The long antennae are unusual for *Stenotabanus* and the sparsely setulose subepaulets place the species in the anomalous group intermediate with *Tabanus* and with interesting divergence suggestive of the distinctive *Nea-*

*vella* Oldroyd of the African East Coast. The last has bare subepaulets and elongate antennae, but antennae and frons of females have fundamentally different proportions and shapes. Eye pattern of *S. macroceras* was not clear-cut on revival, but in two specimens appeared to consist of a heavy median purple stripe, and an equal green one below it, both outwardly bent upward in most unusual right-angled curves to reach upper eye margin; upper area green, and lower margin widely purple extending around the outer "corner" of eyes beyond the distal strong bend in adjoining green stripe.

### ***Phaeotabanus aphanopterus* (Wiedemann).**

A female from Rio Ucayali, Peru, 28 November, 1923, Harvey Bassler, in AMNH, appears to be this, though legs are dark brown rather than rust-red, pleural vestiture is yellow and the entirely brown wings fade but slightly along the margins. Abdomen is yellow-brown without the lilac-reddish sheen described by Kroeber (1930a). Thorax is blackish with appressed brassy hairs and there are some golden hairs on the incisures of tergites 2 to 4. Fairchild has commented on the need for recognizing *Phacotabanus* as a full genus. The present species agrees with the genotype, *P. litigiosus* (Walker), in having bare subepaulets and no tubercle at the vertex in the female, though labellae are relatively larger. The syntype of *P. aphanopterus* from Brazil in VNM is intact though a little moldy; another in Frankfurt, now headless, is wrongly labeled "type." Since a third is reported in Berlin Museum, the VNM specimen labeled "Brasilia, Coll. Winthem," No. 3737 is designated as lectotype. It has bare subepaulets, no visible ocelli.

### ***Phaeotabanus aphanopterus* var. *obscuripilus* Kroeber.**

A female taken at Pucallpa, Peru, x-2-54, by Schlinger and Ross and another from Rio Ucayali, xi-28-23, Harvey Bassler (AMNH) extend the range considerably. The former (in CAS) agrees in detail with the type in BMNH from British Guiana except for absence of spur veins. The subepaulets are contrasting bright orange, nonsetulose, which removes the group from *Tabanus* proper.

A male from Tingo Maria, x-10-54 (also CAS) differs in only minor respects. The hairs of the abdomen are less appressed, and pale incisures below not as prominent. This also agrees with description of *Ph. nigristylus* Kroeber (type in Hamburg from French Guiana now destroyed) which is undoubtedly a synonym.

A syntype each of Wiedemann's typical form are listed in Frankfurt, Berlin, and Vienna. The one in Frankfurt is now headless. The one in Vienna, "Brasilien Coll. Winthem" No. 3737, may be designated lectotype. It is intact but a little moldy.

**Tabanus (Taeniotabanus) callosus** Macquart.

One female from Peru by Sehlinger and Ross, I-3-55, at Colonia Perene, Rio Perene, N.E. La Merced. A variant from Tingo Maria, x-27-54 (in manuscript of Dr. G. B. Fairechild as sp. No. 3).

**Tabanus missionum** Macquart.

In Paris Museum of Natural History there are 5 syntype specimens representing two species from Brazil having superficial resemblance to each other. Three of one are in better condition than the other two but represent a small species of the difficult *Taeniotabanus* group with rather narrow fronts and small callosities, and with no spur-veins at the base of vein  $R_4$ . Macquart's reference to the fore legs sometimes being bicolored and the annuli black were the only statements referable to these, whereas the other important characters of large brown callosity and spur-veins refer to two specimens related to *Stenotabanus* or *Dasybasis*. It is necessary, therefore, to select a lectotype and is appropriate to refer the name to these latter insects which will be more readily recognized. The syntype with clearest abdominal pattern is selected and redescribed.

LECTOTYPE ♀, 11 mm. Frons, broad, parallel-sided, index 1:2.2; yellow pollinose, a small, low brownish tubercle at the vertex. No median callus, but a broader than tall, brown, rugose basal callosity touching the eye margins. Subcallus yellow, face gray, beard white. Antennae yellow with yellow hairs, the flagellums missing. Palpi missing. Eyes sparsely pilose under high magnification, bare for key purposes.

Thorax black, discolored and cracked; pleura with pale hairs. Legs red with straw-yellow hairs. Wings clear, veins bright yellow, subepaulets bare, cell  $R_5$  open, short spur veins present.

Abdomen worn, but with a characteristic wide black, longitudinal line, and the sides and venter yellow.

Labeled "des Misiones" (probably Argentina).

A syntype is in agreement and has slender elongate, pale-haired, pale-yellow palpi, and callosity is darker brown. Antennae also broken. No pale markings are evident in the median stripe of either.

Six females in Pechuman collection from Tandil and General Pacheco, Buenos Aires Prov., R. A., 15-23 March, 1951, are better preserved than either of the types. Size 9.5-12.5 mm. The largest is closest with entirely pale-haired scape and pedicel (flagellums missing), palpi and legs. The callosity is reddish laterally with a dark brown disc, rectangular, touching eye margins and with a small median extension above. The appendages of the other three have some black hairs, frons may be a little narrower, and callosities vary in shape and color to entirely black and subtriangular. The flagellums are black,



slightly reddish basally in two, no dorsal angles, and style equal to plate in length. In one there are dark shadows on fore coxae and basal half of hind femora; fore tibiae are darkened apically in all, and short spur veins are present.

This species is peculiar in having a single purple crossband on relaxed eyes. In one specimen in which the abdomen is partially greased, the median stripe is obscure, in all others it is contrasting, and in two unrubbed specimens there are suggestions of narrow, pale-haired median lines on the black stripes. It is likely that the meagerly described *Tabanus confirmatus* Brethes is a synonym.

#### ***Dicladocera neosubmacula* Krober.**

One female from Tingo Maria, 18 September, 1954, appears to be this species. Wing pattern is reduced to heavy vein marginings basally and below stigma, much as in *D. hoppi* Enderlein. However, the body is dull reddish-brown, less compact, and lacks the blackish enameled appearance of the latter and of the *D. macula* complex, though frontal and abdominal features show relationships. Since there is only one type of *D. submacula* (Walker), seen by Fairehild (1956) and the writer in BMNH, the reasons for Krober (1934) synonymizing this *pro parte* under both *D. macula* (Macquart), and his *D. "neo-submacula* nov. nom." are not apparent. The type of *D. submacula* is smaller and has some vestiture straw-yellow in color compared to the type of *D. macula* (Macquart) (also in BMNH) with orange hairs, but the synonymy appears correct, though Fairehild disagrees. In any event, *D. neosubmacula* Krober is distinct from either and has, moreover, completely nonsetulose basicostas. The writer has seen five syntypes of *D. argyrophora* (Schiner) in VNM and agrees with Krober that they differ from *D. macula* (Macquart) only in orange vestiture extending from beard onto chest, upper fore coxae, pleura, and humeral lobes.

A female of *D. hoppi* (Enderlein) from Arica, Chile, Cuya Farm, November, 1949, determined Barretto, is available for comparison with *D. neosubmacula*. It is a much larger, and blacker, shining species. Since this sex has not been described, this specimen may be assigned as allotype of *D. hoppi*. Length 17.5 mm. Eyes black, unbanded, with short sparse hairs which are more evident than in *D. neosubmacula*. Frons parallel-sided, index 1:3.4, sooty-gray pollinose, a small, bare black spot at vertex but no vestiges of ocelli. Callosity drop-shaped, brown, widely separated from eyes. Sparse hairs laterally on subcallus. Face and cheeks sooty-gray pollinose with black and brown hairs intermixed. Antennal hook not reaching end of plate. Palpi gray-black, black-haired, rather slender. A few yellowish hairs on thorax, but vestiture here and of legs largely brown and black intermixed. Abdomen enameled blackish with dark brown shadings on sides and venter. Wings and

other characters as described and figured for the male by Krober (1940). Except that the wings have more subhyaline parts, and markings are reduced, antennal hook is shorter, and the vestiture of beard, pleura, chest, and fore coxae is darker, the species might be considered only a dark variant of *D. macula*. The subepaulets, likewise, are covered with sparse setulae only on upper half.

#### ***Dicladocera scutellata* (Macquart).**

The synonymy of this and *D. macula* (Macquart) is complicated, and further confused when Krober (1934) wrongly placed *D. scutellata* in synonymy with the later *D. macula*. There is variation in the color of the vestiture of head and thorax in series of both. A specimen from Minas Geraes, Brazil, agrees with two syntypes of the former in Paris Museum (from "Patrie ignota") except for darker beard which is variable in series, but differs from the *D. macula* type in BMNH ("? New Grenada") in more robust, enameled appearance, darker wings especially basally, and much broader frons with heavier keel; patches of white hairs on outer corners of sternites 3 and 4 in *D. macula* have not been seen in *D. scutellata*.

A female each from Colombia and Peru, compared with *D. macula*, also agreed with types of *D. auribarbis* (Macquart) and *D. submacula* (Walker) in BMNH, and *D. argyrophora* (Schiner) in VNM except for minor variations in color of vestiture. These also agree with a specimen compared with *D. satanica* (Bigot) by Fairchild, but differ from *D. castanea* (Bigot) (Fairchild correspondence) which the writer neglected to compare. Fairchild (1956) states that if a specimen determined by Krober in BMNH agrees with types in Berlin of *D. neosubmacula* (Krober) then this is distinct from the above.

A male and four females of *D. scutellata* in Senckenberg Museum, Frankfurt, studied through kindness of Dr. Elli Franz, labeled "Passa Quarto an Camp Blütii, 4/3,20 Zikàn" show variations in color of beard from brown to yellow. The undescribed male may be taken as allotype.

ALLOTYPE ♂, 17 mm. Agrees with female in hooked antennae, red scutellum with shadow at base, dark legs and venter, and yellowish-tinted wings. The eyes are bare, facets sharply enlarged in the upper two-thirds, palpi elongate, cylindrical, blunt, without apical nipple, and basal three tergites predominantly reddish-brown. Fore tarsal claws subequal.

#### ***Dicladocera tinctipennis* Philip, new species.**

A robust species with brick-red, patternless abdomen, black antennal plates with long hooks, black femora, and uniformly tinted wings with setose subepaulets.

HOLOTYPE ♀, 18 mm. Eyes bare. Frons pale brown pollinose, parallel-sided (index 1:7.2), a darker, sparsely pollinose spot at vertex but no ocelli; callosity reddish, ovoid, bidentate below, separated from the eyes, and rather abruptly narrowed above into a narrow, reddish keel to upper third of frons. Subcallus, face and cheeks brown pollinose with concolorous hair below. Antennae with two basal segments reddish with black hairs, flagellums entirely black, teeth reaching to the end of plates, and longer than styles. Palpi elongate, pale brown, black-haired, slightly thickened basally and blunt apically. Labella large and fleshy.

Notum and scutellum dark brown pollinose over blackish integument, clothed with sparse black and yellow pile; antealar tubercles and pleura reddish with black and yellow pile. Coxae grayish-yellow pollinose with mostly yellow hairs. Femora black, tibiae reddish, mostly black-haired; hind-tibial fringe prominent. Wings with costal cells and veins yellow, membrane pale yellow without intensified pattern; cells  $R_5$  wide open, no spur-veins. Halteres yellow, knobs paler and brighter.

Abdomen uniformly brick-red, with indistinct median dark spots below; almost entirely black-haired with a few scattering yellow ones.

“W. Ecuador, Mindo. 1913. Hammon.” In BMNH.

PARATYPES, 6 ♀'s, same data, in BMNH and collection CBP.

This was first questioned as a possible variant of *D. unicolor* Lutz of Brazil, also with tinted, but not pictured wings. That species, however, has reddish legs and antennae, and paler thorax.

### **Stypocheila inca** Philip, new species.

A medium-sized, plain brownish species with pictured wings, bare eyes and subepaulets, and reddish antennae and legs.

HOLOTYPE ♀, 15 mm. Eyes without bands (relaxed). Frons reddish-brown pollinose, parallel-sided (index 1:5.0); callosity reddish, drop-shaped, widely separated from eyes, and gradually narrowed into a median keel which reaches upper fourth of frons. Subcallus, face, and cheeks reddish-brown pollinose, beard blackish in front, pale behind, face in profile a little more snout-like than in preceding. Basal segments of antennae black-haired; plate slender, tooth unusually long and reaching end of second annulus, style dark brown. Palpi dark red with black hairs, long and slender, half as long as the proboscis, which has smaller and smoother labella than the preceding. Proboscis a little longer than height of head.

Thorax and scutellum reddish-brown, with four narrow gray stripes anterodorsally, and clothed with black and brown hairs. No pallid hairs under wing bases, but patches of whitish hairs in front of halteres. Legs unicolorous reddish with concolorous hairs. Wings brown, paler from apex around hind

margin, and with a contrasting hyaline band across inner cross veins; a blunt outward extension of brown envelops the fork. No spur veins, cells  $R_5$  wide open. Halteres yellow, paler on knobs.

Abdomen unicolorous reddish brown with inconspicuous black and some brown hairs posteriorly; venter also with a perceptible grayish bloom.

Peru, Monson Valley, Tingo Maria, 3 November, 1954, Sehlinger and Ross. In CAS.

PARATYPES, 15 ♀'s, same locality and collectors, between 23 September and 11 December, 1954; in collections CAS, CBP, LLP, and GBF. Three were taken at light. All in close agreement with the holotype; frontal indexes of ten between 1:4.1 to 1:5.6 (mean 4.99).

Close inspection is required to separate this species from *S. peruviana* (Bigot) six specimens of which were taken at Nanegalito, Ecuador, 27 October, 1956, by Mr. R. W. Portman (identified by Dr. G. B. Fairchild). Eyes in the latter, however, are distinctly hairy under a hand lens; unworn specimens have a patch of bright yellow hairs below the wing base and also in front of halteres, the hyaline crossband is narrower and subcallus is more protuberant in profile. Panama specimens of *D. badia*, also with hairy eyes, are close to *D. peruviana*, but in those, infuscation in basal cells is more dilute, subcallus flatter, callosity more sharply outlined, and there are patches of whitish hairs in front of and above the halteres. *D. peruviana* was overlooked when Kroeber described his *D. badia*, but the types of both have been seen by Fairchild (1956) and the writer in BMNH, and assigned to *Stylochela* later by Fairchild (1958).

### **Dichelacera (Catachlorops) auripilis** Philip, new species.

A medium-sized, dark brown species with extensive golden pile over head, thorax, and venter, red callosity and appendages, and contrasting, irregular, dark crossband on wings; a golden-haired triangle in middle of fourth abdominal segment.

HOLOTYPE ♀, 14.5 mm. Eyes bare. Frons golden-yellow pollinose, a little darker at the vertex but no ocelli, distinctly convergent above (index 1:4.5); callosity large, protuberant, yellowish-brown, ovoid, narrowly separated from the eyes and gradually tapered into a heavy, reddish median keel which attenuates at the upper third of the frons. Subcallus, face, and cheeks golden pollinose with some gray shadows, face receding; beard sparse, golden-yellow. Antennae brick-red, style blackish, black-haired basally, the tooth reaching to end of first annulus. Palpi very slender, elongate, deep red with black hairs. Labellum fleshy but rather small.

Notum dark brown with three faint reddish lines anteriorly, scutellum reddish, the whole clothed with sparse black, and conspicuous golden-yellow

hairs. Pleura and coxae grayish-yellow with bright yellow pile. Legs yellowish-red with rufous hairs. Wings hyaline in apex and hind margin, yellow in discal cell, pale yellow across basal and anal cells; the inner margin of cross-band starts at proximal end of stigma and crosses middle of discal cell into middle of cubital but does not reach hind margin; extensions of outer margin along veins  $R_{2+3}$ , and longer along  $R_5$  nearly to the wing margin, receding along middle of cell  $R_5$  to base of, but missing, cell  $M_1$ , and continuing across cells  $M_2$  and  $M_3$  to middle of cubital cell. Cell  $R_5$  wide open, no spur veins. Subepaulets bare. Halteres brown, yellow on knobs.

Abdomen subshiny, reddish-brown on tergites 1 to 3, dark with a large flat, golden-haired triangle which crosses tergite 4<sup>2</sup>; otherwise brown thereafter; entirely black-haired, except for triangle and a few yellow hairs on extreme edges and in middle of tergite 3. Venter reddish with golden hair.

"Colombia: 18 mi. SW Mocoa Narino, 1910 m., 3 March, 1955, Sehlinger and Ross." In CAS.

The description of the smaller *D. ecuadoriensis* Enderlein omits the distinctive frontal characters and apparently includes a wing picture related to this, but there are white hairs on beard and chest, the notal hairs are brownish not golden, and the tergal incisures have yellow hairs in that species. Dr. Fairchild writes that his specimen of *D. ecuadoriensis*, though worn, shows suggestions of pale triangles on tergites 2 to 4 and has frons less divergent below compared to this. Wing picture and abdominal triangle obviously are derived from common ancestral stock with *D. caloptera* (Schiner), the type of which in VNM is in close agreement with a Venezuela specimen which has shorter antennal tooth, white-haired abdominal triangle, and is a much darker insect.

### **Rhabdotylus venenata** (Osten Saeken).

Though the original description includes two specimens with some variation, the author entertained "no doubt about their specific identity." Examination of these two, however, shows these differences to have specific significance. The Panama specimen, representing the form which occurs southward into Brazil as recognized at present, is herewith designated as lectotype. It is more robust (16 mm.), front 1:4, antennae, including style, red, face and cheeks golden-yellow pilose and pollinose, palpi orange with mostly yellow hair, femora bright yellow-orange with concolorous hair, and abdomen with greenish shades basally.

The other, smaller, darker specimen from Guatemala appears to be *R. viridiventris* Macquart with pale beard and bicolored fore tibiae.

2. This triangle with its conspicuous golden hairs was entirely obscured by "greasing" until the specimen was cleaned in ethyl acetate.



**Styppommia abdominalis** Philip, new species.

A delicate brown species with abdomen unusually abbreviated compared to the long wings, appendages orange to yellow, and with golden-haired abdominal incisures widened to form median triangles which are probably easily lost by wear.

HOLOTYPE ♀, 8.5 mm., wings 11 mm. Eyes bare; green, unbanded (relaxed). Frons yellowish-brown pollinose, sides parallel (index 1:4.3), three vestigial ocelli in a flat, thinly pollinose, small triangle below vertex. Callosity taller than broad, smooth and bulging, subovoid, dark blackish-brown, separated from eyes and prolonged above in a thin median keel reaching halfway to vertex. Subcallus golden-yellow pollinose. Face and cheeks buff pollinose, the beard sparse, straw-yellow. Tentorial pits deep, blackish. Antennae orange, not darkened apically, with concolorous hairs, plate as in *Stenotabanus* without dorsobasal prominence, subequal in length to style, and half again longer than tall. Palpi slender, yellow, about equal to antennae in length, covered with yellow and brown hairs intermixed. Proboscis, including fleshy labella, yellow, but little longer than palpi.

Thorax and scutellum brown, paler around anterior margin to include antecular tubercles; covered with brown and appressed brassy hairs. Pleura, chest, and coxae pale grayish-yellow pollinose and pilose. Legs bright yellow with mostly concolorous hairs. Wings yellowish tinted, deeper along costal margin, and a smoky tinge at apex. Fork and outer cross veins with clouds; spur vein moderate. Halteres brown. Subepaulets with a few sparse hairs.

Abdomen dull brown above covered with mostly black hairs, incisures with yellow hairs which widen into median triangles, accentuated in certain lights when viewed from front. Abdomen ends before the tip of the discal cell of the folded wing. Venter deep yellow with yellow hairs.

“Peru: Monson Valley, Tingo Maria, 27-X-1954, Schlinger and Ross.”  
In CAS.

This is near *Styppommia flavescens* Kroeber, but differs from a specimen of *S. flavescens* (which agrees with Kroeber's description except for a slightly narrower front) with same locality data in having a darker dorsum and frontal callosity, pleura more grayish, style more chunky, apical annulus not darkened, and suggestions of middorsal triangles on abdomen which probably would not show in worn specimens. The generic placement might better be in *Stenotabanus* in its broad sense, but cannot be decided at present. Kroeber (1930) suggested that *Tabanus flavescens* Thunberg might be the same. However, I examined Thunberg's type on loan through kindness of Professor Bertil Kullenberg, Uppsala, and found it was a *Dichelacra*.

**Tabanus quadripunctatus** Fabricius.

There is question whether this represents a southern extension of *Hybomitra* (*Tylostypia*) or a parallel development in the Neotropics from elements related to *Stypommia*. I am inclined to agree with Fairechild (correspondence) that this species does not belong in the boreally elaborated *Hybomitra*, which avoids the taxonomic complications involved in deciding date of validation of *Poeciloderos*, one of several generic and subgeneric names proposed for this species and its synonyms.

From Tingo Maria, are two females of the typical dark form, 10 October and 16 November, 1954, and two males of the pallid form heretofore assigned to variety *amabilis* Walker, 2 November and 11 December. Fabricius' type female in Copenhagen is intact except for missing palpi, and agrees with a Colombia specimen having predominantly dark abdomen and three rows of pale spots. I have confirmed the synonymy of *Tabanus punctipennis* Macquart and *T. nigropunctatus* Bellardi with this typical form by study of the respective types in Paris and Turin. From notes and a drawing of the abdominal pattern furnished by Professor Kullenberg, the type of *T. elegans* Thunberg in Uppsala Museum evidently is an intermediate color phase in which the double geminate spots are joined across the anterior margin of tergite 2 and reach the hind margin, but the sublateral pale spots are large and barely touch the incisure behind.

*Tabanus quadripunctatus* is extremely variable in frontal structures of females, including distinctness of ocellar tubercles, narrowing or closure of cells  $R_5$  at wing margins, and color patterns of abdomens; the latter show both melanistic and albinistic extremes. To the variation with closed cell  $R_5$ , Enderlein (1924) gave the name *dasyphyrtina* under his *Hypopelma quadripuncta* (sic). Kroeber (1934) catalogued this and *T. maculipennis* Macquart (preoccupied) as synonyms of the supposed pallid form *H. amabilis* which he figured in 1931. The type of the last in BMNH, however, is also the dark form. This leaves the pallid form without a name. Although there is complete intergradation between the two forms, a name for the pallid extremes serves a useful purpose and is herewith proposed.

**Tabanus quadripunctatus amabilinus** Philip, new variety.

HOLOTYPE ♀, 12 mm. Differs from the typical form in predominantly gray-pilose notum with a blackish transverse band across the middle connected to four narrow, black lines in front and three behind, lateral margins widely reddish. Tergite 1 on posterior half is pale pinkish with white pile, and two small submedian brown spots depend from the anterior black band. Tergite 2 is entirely pinkish with white pile, a pair of small, isolated brown spots submedially, and larger diagonal dashes on the sides. Spots on follow-

ing tergites are similar in location to those of typical form but larger and more abundantly white-haired.

Andrelandia, Minas Geraes, Brazil, January, 1938, B. F. Gomes; determined as "*T. quadripunctatus* F." by A. V. Martins of Instituto Ezequiel Dias, Minas Geraes, Brazil. In collection CBP through courtesy of Dr. Martins.

ALLOTYPE ♂, 15 mm. Like the female but notum is almost entirely dark with four small, indefinite patches of pale scales and abdomen above and below is more strikingly whitish; all dark spots reduced, those on tergite 1 and sides of tergite 2 absent.

Peru: Tingo Maria, 2 November, 1954. Schlinger and Ross. In CAS.

PARATYPES, ♀, same data as holotype, and ♂ same data as allotype (in collection CBP); ♂, ♀, Rio Suarez Santander, Colombia, 900 m., 11–28 August, 1946, L. Riechter (in AMNH); ♀, Campinas, Brazil, 14 April 1948, G. Bouvier (determined as *T. punctipennis* Macquart by Castro); and ♀, Pyrenopolis, Goyaz, Brazil, 28 December, 1936 (determined as *P. 4-punctatus* f. *amabilis* by Fairchild) (in collection GBF).

#### **Tabanus (Taeniotabanus) stenocephalus** Hine.

Two males from Monson Valley, 21 October and 3 November, 1954, agree closely in structure of head and color pattern with a topotypic male from Guatemala, compared with the syntype male, except that palpi and under parts including vestiture are much more yellow. Eyes are bare, and juncture of upper and lower facets is indiscernible.

#### **Tabanus (Taeniotabanus) carneus** Bellardi.

From Monson Valley between 18 September and 23 December, 1954, 23 males and three females of this widespread species were taken. The only divergence from the lectotype male (Philip, 1954) in Turin Museum is a tendency in a few males for increasing apical production of the palpi to a definite downward produced, blunt nipple in two specimens. Intergradation is complete in this character, but the majority of the males agree in having ovoid, moderately swollen palpi without terminal production in the lectotype. The females are typical *T. carneus* with completely reddish legs and scutellums, and broad, even abdominal lines.

#### **Tabanus (Taeniotabanus) pungens** Wiedemann.

A male, 16 November, and a female, 11 December, also from Tingo Maria, are assigned to this species. The former has dark fore coxae, femora, and

scutellum, while the female has these parts reddish, differences which Fairchild (1942) has accepted in keying these sexes under synonym *T. angustivittus* Krober. It appears not unlikely that coloration of these parts may vary in the female, and I have applied the oldest name to the complex for which Fairchild (1956) has provided the synonymy under *T. desertus* Walker.

The types of both *T. pungens* and *T. desertus* in VNM and BMNH, respectively, are worn and somewhat discolored; the latter has been broken and repaired. A female from Panama is in fair agreement with each except that *T. pungens* has brown rather than red fore coxae and hind femora (the mid femora are red), and scutellum is red only apically but blackish on base. While frons and size of callosity are in agreement, upper margin of latter in *T. pungens* has a low tridentate appearance due to small upward extensions of two upper corners, which are usually rounded in most specimens.

The same minor differences occur between *T. pungens* and a Mexican specimen in good agreement with the type of *T. propinquus* Bellardi in Turin, except for the entirely red scutellum of the last. *Tabanus sallei* Bellardi, also from Mexico, is obviously the male of the same species and agrees with the type in Turin, in having entirely dark scutellum, fore coxae and femora as discussed above. The red on the sides of the abdomens of both males is a little more extensive than in the Tingo Maria male but they agree in other characters.

I have not seen females which are like the males in having all dark scutellums, fore coxae, and femora, but it seems likely that they should occur considering the extensive distribution from Mexico to Peru and Brazil.

#### **Tabanus (Taeniotabanus) claripennis** Bigot.

As Fairchild (1956) has shown, the well-known *T. hookeri* Knab is a synonym. A female taken at Angol, 31 December, 1950, by Ross and Michelbacher is the first recorded for Chile. It is small, 10 mm., and the writer has seen another small (9 mm.) female from British Guiana which confuses placement in Fairchild's (1942) keys, though the wide front differentiates it from the *T. callosus* group. *Tabanus ameghinoi* Brethes, from northern Argentina, is a synonym.

#### **Leucotabanus exaestuans** Linné.

A male was taken by Schlinger and Ross in Tingo Maria, December 11, at light (determined by G. B. F.).

#### **Tabanus (Macrocornus) sorbillans** complex.

Specimens from Satipo, Peru (in collection LLP) have cell  $R_5$  closed and

with petiole as long as the spur vein. A female in AMNH from the same place has this cell narrowed but open to width equaling the base of cell  $M_1$  at the discal cell in one wing and just closed at the margin in the other. This condition was described for the type of *Bellardia rubrofemorata* Krober. Material before me from Peru and other South American localities is insufficient to determine variation in this respect but when adequate, will affect assignment of names in the *T. sorbillans* complex, which unfortunately is not represented in the Tingo Maria collections under study here.

*Tabanus rubripes* Macquart is considered close by Fairchild (1956) "but distinct."

It appears probable that *T. testaceus* Macquart from Brazil as redescribed by Krober (1930) is a variant also. Krober reported the type in BMNH, but it was not seen by either Fairchild or myself in 1953. The type listed by Fairchild (1956) as in Paris Museum and also seen by me from Cayenne (Macquart's type locality), is not a *Macrocormus* with wing spurs, and because it has wide open cells  $R_5$ , doubts are raised about the real identity of *T. testaceus*, though this is preoccupied in any event.

### **Tabanus (Lophotabanus) lophus** Philip, new species.

A large, lilac-brown species with dark antennae, reddish legs, long wing spurs, and the "ocular spot" prominent but confined to the praescutellum.

HOLOTYPE ♀, 19 mm. Eyes bare, relaxed, two narrow purple bands on a bluish-green ground. Frons narrow (index 1:9.0), buff-brown pollinose, with a peculiar, small, bare, rugose spot in apex of a v-shaped patch of black hairs at vertex; callosity and keel red, former finely wrinkled, ovoid, with rounded lower corners; contiguous to eye margins in middle and tapered gradually above into a keel which reaches nearly three-fourths the height of frons and is a little expanded in the middle. Subcallus buff pollinose. Face and cheeks whitish pollinose and pilose. Antennae with basal segments and inner face of plate pale brown, scape swollen and hoodlike with abundant black hairs; plate long and slender, dorsobasal tooth low but acute, outer face dark brown, style blackish and about half as long as plate. Palpi creamy, long, somewhat thickened basally and tapered to a blunt point, black-haired with mostly white hairs on basal segment.

Thorax lilac-brown with gray pollinosity and three narrow, indefinite lines anteriorly, covered with sparse black and appressed silvery hairs; praescutellum brownish black with a dense patch of coal-black hairs flanked on either corner by white hairs. Scutellum gray-brown, not darkened basally, broadly pinkish around hind margin with black hairs on the disc, and silvery-white hairs around entire margin which continues forward to form patches above wing insertions. Pleura, chest, and coxae whitish-pollinose and pilose,



a few intermixed brown hairs above. Legs pinkish with abundant white hairs; inner surfaces of fore femora, upper surfaces of the hind tibiae, outer, distal fifths of fore tibiae, and tarsi with brown to black hairs; a few black hairs distally in hind-tibial fringe and on dorsums of the femora. Wings pale yellowish, accentuated along radial vein margins; cell  $R_5$  narrowed at the wing margin; spur veins longer than their stems. Halteres pale yellow. Subepaulets setulose.

Abdomen lilac-brown with wide gray incisures, black hairs over all, including the incisures, except for silvery-white hairs on the extreme lateral margins and in a median row of equilateral triangles which reach about half-way across tergites 1 to 5; 6 and 7 entirely black-haired. Venter pink, thinly dusted with white pollen; white hairs over all with sparse median patches of black hairs as viewed from front; sternite 7 with coarse black hairs.

Peru: Monson Valley, Tingo Maria, at light, 11 December, 1954, Schlinger and Ross. In CAS.

ALLOTYPE ♂, 15 mm. Like the female in body colors and black spot restricted to the praescutellum, but equilateral triangles on tergites 4 and 5 nearly crossing segments, lateral white hair patches confined to hind corners, and black hairs on venter more extensive. Head wider than thorax, facets moderately enlarged but sharply demarcated and brown in upper two-thirds of eye area. Tubercle in occipital notch small, ovoid, situated below the eye level. Beard white with sparse brown hairs on upper genae. Antennae dark red, style blackish. Palpi ovoid with indistinct terminal nipples. Wings not as tinted as in female probably because somewhat teneral. Thorax paler, probably for the same reason.

Rio Suarez, Santander, Colombia, 900 m., 11–28 August, 1946, L. Richter. In AMNH. Determined as *T. xipe* Krober by J. Bequaert.

PARATYPE females: 2, Restrepo, Dept. Meta, Colombia, 500 m., 1936, J. Bequaert (in collections CBP and GBF), and 1, Villavicencio, Meta, Colombia, 13 June, 1941 (determined respectively as *T. xipe* by J. Bequaert and Fairehild); 5, Villavicencio, Meta, Colombia, various dates from April to August (in collections GBF and CBP); 1, Maracaju, Matto Grosso, Brazil, April, 1937. All in close agreement with the holotype; 16 to 19 mm. Two have more reddish antennal plates, and in three more worn specimens, the abdominal triangles appear flatter with suggestion of very narrow, pale incisures. *T. albocirculus* Hine (probable synonym *T. xipe* Krober) averages smaller and is usually more reddish, especially the antennae in the females, its "ocular spot" encroaches broadly onto the scutellum, abdominal triangles are usually shallower and broader, merging into pale incisures, and frons of females are narrower (1:10.0 to 1:11.2 in six specimens). Unfortunately, the type of *T. xipe* was destroyed in Hamburg, but I have seen four "eotypes" (paratypes) from "Surinam" and "Paramaibo" in VNM which also differ in

these respects. *T. oculus* Walker (synonyms *T. albonotatus* Bellardi, *T. bipartitus* Walker; I have a homotype from Mexico compared with types of all three) is at once distinguished from *T. lophus* by closed and petiolate cell  $R_5$ , red antennae and larger "ocular spot." *Tabanus pseudoculus* Fairchild is a smaller insect, also with larger spot, pale hairs of most parts including beard, creamy-yellow, broader frons, more reddish antennae, and wing veins not margined with brown. *Tabanus albopruinosus* Krober is a large species from Brazil with body color, dark antennae, and praesutellar black spot resembling *T. lophus* but the frons is much narrower (1:14), white hairs are reduced to lower sides of two hind pairs of femora, and bases of tibiae (mid tibiae of *T. lophus* are entirely white-haired), and pleura yellow-haired. There is no sign of rounded, sublateral, abdominal spots in *T. lophus*, and no mention is made of spur veins in *T. albopruinosus*. The writer saw the type and "cotype" females of the latter in VNM but had no specimens for comparison. *Tabanus funomarginatus* Hine, also from Brazil (Amazonas), has larger scutellar spot, no spur veins, and darker fore femora.

The writer has seen *T. albocirculus* from Trinidad, British Guiana, Venezuela, Colombia, and Para and Matto Grosso, Brazil. Revived eye patterns of three Brazilian and five Panamanian females of *T. albocirculus* showed blue and green banding in an unusual pattern in which three green bands and the green lower border alternated with three purple bands and the upper border purple; the upper purple band short while green and purple ones below it bend around it outwardly and upward at a 90° angle to meet the upper purple border before the outermost angle of the eye. The median bands in two relaxed *T. lophus* above do not have these strong upward bends toward the outer angles of the eyes.

The specific name, *T. lophus*, refers to the frontal keel for which the subgenus was named, though this is not even a special feature of either the new species or the subgenus.

### **Tabanus (Lophotabanus) flavicorpus** Philip, new species.

A rather large, bright yellow-bodied species with mostly yellow hairs, a conspicuous, dense, dark brown-haired spot on praesutellum and anterior half of scutellum, and single row of tall, pale triangles on the abdomen.

HOLOTYPE ♀, 18 mm. Eyes bare (relaxed), apparently plain green without bands. Frons slightly widened above (index 1:7.0), yellow pollinose with a darker median patch, short yellow and black hairs at vertex without a bare spot underneath. Basal callosity pale red, small, only half again taller than broad, ovoid, widely separated from eyes, corners rounded below, and tapered above into a narrow, reddish median keel which reaches to nearly three-fourths height of frons. Subcallus buff pollinose, face and cheeks gray-

buff with pale yellow hairs. Antennae bright red, the style dark brown; scapes swollen and hood-like, taller than plates and covered with dark brown setae; plates two-thirds longer than tall at acute basal tooth, strongly excavated dorsally, style short, equal to height of plate. Palpi slender, elongate, tapered to a blunt point, deep yellow, covered with pale yellow and brown hairs, entirely yellow-haired basally. Theca reddish, labella brown, fleshy.

Thorax pale reddish-brown, unlined, sparsely covered with pale yellow and reddish hairs intermixed, antecular tubercles with coarse dark brown hairs and a dense patch of the same color on praescutellum and a patch of straw-yellow ones on either side. Scutellum reddish on disc, widely gray-margined behind, with a dense median patch of coarse dark brown hairs on the anterior half, pale-haired around the margin. Pleura yellow with sparse gray pollen and pale yellow hairs. Legs yellow with concolorous hairs, darker reddish on tarsi, fore tibiae but little darker on the tips. Wings tinted yellow, paler behind, veins pale brown, cell  $R_5$  wide open, no spur veins. Halteres bright yellow on the knobs. Subepaulets setulose.

Abdomen pale burnt-sienna above, bright reddish-yellow, almost orange, below. Mostly with rufous hairs on dorsum, last three tergites predominantly brown-haired; a median patch of creamy hairs on tergite 1, and a middorsal row of tall, almost equilateral pale yellow triangles on tergites 2 to 5, first two reaching over half-way across, the last two almost across, the respective tergites. Extreme edges and entire venter bright golden-haired except for coarse dark brown hairs on sternite 6.

Rio Maranon, Peru, 28 August, 1923, Harvey Bassler. In AMNH.

The entirely unbanded eyes and entirely yellow-brown to reddish appearance with almost no really black hairs, especially on the scutellar patch are unlike any species known to me in *Lophotabanus*. *T. fumomarginatus* Hine is a darker insect with darkened fore femora and pale abdominal incisures.

### **Tabanus basivittus** Walker.

None of this species was taken at Tingo Maria, but that it must be common in some parts of Peru is attested by a series in AMNH from "Middle Rio Ucayali" and "Lower Rio Tapiche," July to December, and in USNM from Iquitos, March–April. Two females were also taken by Schlinger and Ross at Pucallpa, 2 October, 1954. The better known *T. viduus* Walker, *T. bitinctus* Walker and possibly *T. marginicervix* Macquart are synonyms according to Fairechild (1956); I have specimens compared with types of the first two. In unworn specimens, the black patch of hairs flanked on either side by decurved whitish patches under the scutellum on tergite 1 are plain and characteristic on an otherwise inornate, dark brown species with tinted wings.

This species is close to *T. impressus* Wiedemann from which it is dis-

tinguished by open cell  $R_5$ , distinctly wider frons, and more obvious patch of black hairs on the prescutellar ridge. A specimen from Brazil compared with the types of each shows that *T. piceus* Thunberg (seen through kindness of Professor Bertil Kullenberg of Uppsala) is an earlier name for *T. impressus* Wiedemann.

***Stypochela neominos* Philip, new species.**

A robust blackish-brown species with pictured wings, reddish legs, ostensibly bare, unicolorous eyes, and setose subepaulets.

HOLOTYPE ♀, 20 mm. Eyes without perceptible hairs, unicolorous (relaxed). Frons parallel-sided, index 1:4.3, buff-pollinose with a peculiar sooty-

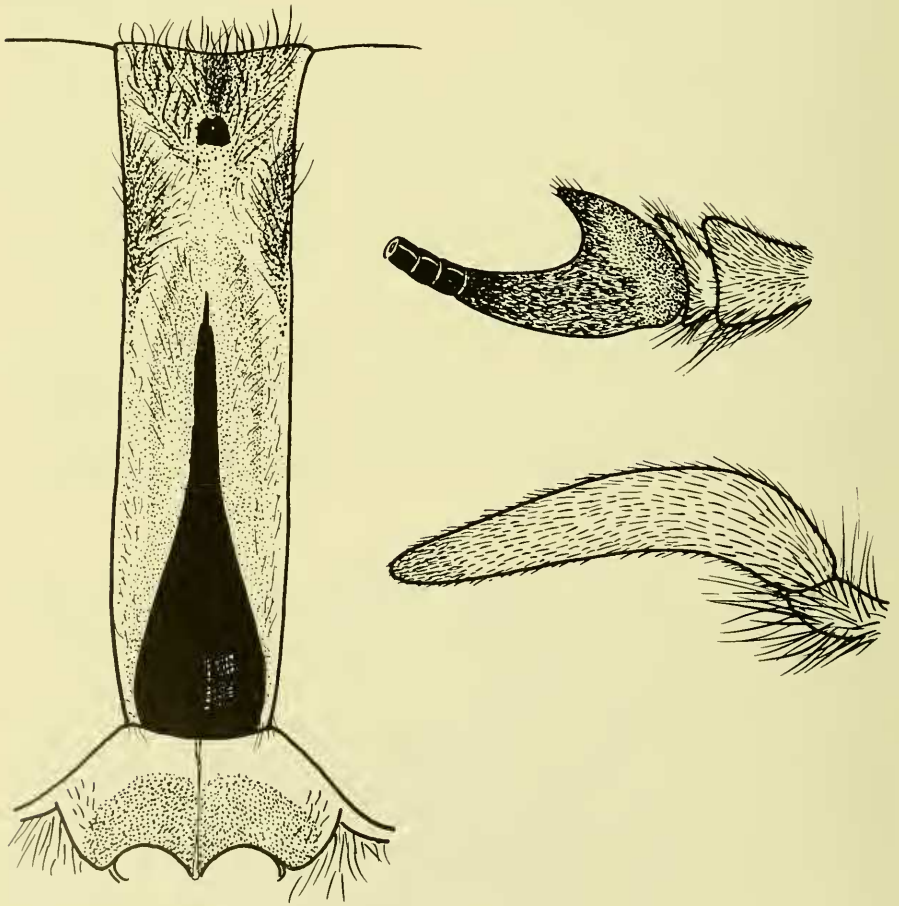


Figure 1. *Stypochela neominos*. Front, antenna, palp.

grey patch in the upper third that mostly disappears in dorsal view, in middle of which well below the vertex is a small raised tubercle; basal callus widely separated from eyes, chestnut-brown, merging gradually above into a darker keel which attenuates in the upper third. Subcallus with indistinct sublateral hairs, brown, with gray pollinosity along eye margins which continues along cheek margins also. Face and cheeks sooty-gray with brown hairs. Antennae black with black hairs, pedicels brown; the acute teeth reach a little over half way to base of styles. Palpi reddish with black hairs, long, slender, hardly tapered, with blunt ends. Labella fleshy.

Thorax brownish-red on dorsum with three wide black stripes, the median one fading at level of wing bases, scutellum dark on disc with reddish margins; invested with sparse black and some coppery hairs. Pleura dark brown with blackish pile, patches of pale pile above and below wing insertions and on tegulae. Wings with infuscation basad of stigma, apex tinted faintly with paler areas in medial and cubital cells, and  $R_3$ ; a pale spot in discal and apices of two basal cells. Cell  $R_5$  open, subepaulets setulose. No spur veins. Legs bright reddish with similar hairs, most of fore femora, basal half of hind pair, and tarsi brownish.

Abdomen bluish-black with black hairs, a few inconspicuous, reddish hairs mesally on incisions 4 and 5.

"Yungas de la Paz, Bolivia. 1000 m." H. Rolle. In BMNH, labeled *Dasyrhamphis minos* Schiner, det. Kroeber, 1929.

PARATYPE females: 3, Bolivia, El Palmar, Chapare Cockabamba, 1000 m., 10-18.i.1958, Monros and Wygodzinsky; 1, Argentina, Quebrada, Caiuzo, Tucuman, 8.iv.1948, Golbaek. In collections Tucuman Nae. Univ. and CBP. In good agreement with holotype. Two show more definite median patches of orange hairs on tergites 4-5, and the Tucuman specimen has entirely reddish femora.

This was compared with the two syntypes of *S. minos* on loan from VNM through courtesy of Professor Max Beier. The latter differ in being smaller, scapes are reddish, plates shorter and less excised, beard black, and golden-hair patches on tergites 4 and 5 are larger and more conspicuous which is not a difference of wear. The generic relationships of this group remain to be refined and there is obvious similarity to *Dasychela* spp. which Bequaert and Renjifo-Salcedo (1946) preferred to restrict to species with bare or only a few setae on subepaulets, and hairy eyes, and since referred to *Stypochela* by Fairchild (1958).

### **Chelommia crassicornis** (Wiedemann).

The type in the Kiel collection of Fabricius now at Copenhagen still carries the mistaken label "rufiventris" as called to attention by the describer



in differentiating it from Fabricius true type in the Copenhagen collection from India. *Chelommia crassicornis* is obviously Neotropical and probably is the prior name for one of the variants of *T. albibarbis* Wiedemann discussed by Fairchild (1956) under *T. alboater* Walker. Eyes of the type are shrunken as though removed from spirit originally, front very narrow (1:12.0), and agrees with the type of *T. albibarbis* in the Copenhagen collection, in long, slender keel, black, strongly excised plate with acute tooth, slender palpi, red scutellum, red-brown femora, strongly tinted wings, and remains of some sublateral, white-hair spots on reddish abdomen, but differs only in pale-yellow beard, and moderately constricted, but not closed cell  $R_5$ .

Available specimens of the group are insufficient to assess the specific value of this last character and I am loathe to assign this old specimen of uncertain preservation to any of the more recently described species. This was, at one time, listed as an unrecognized Nearctic species.

However, I believe *T. alboater* to be a distinct, darker species with almost clear wings, costal cells lightly tinted, and cells  $R_5$  but little narrowed. Three females from Mt. Duida, Venezuela, agree with types of *T. alboater* (which lacks flagellums) and synonym *T. atricornis* Bigot. Scutellums and abdomens brownish black, plates more slender than in the "*crassicornis-albibarbis*" variants, the teeth a little sharper and less produced and with less "hump" on lower margin. The dark type of *T. angustifrons* Macquart, also from Venezuela in BMNH, is soiled but has similar clear wings and head characters, and would have priority if found to be the same.

### **Chelommia albibarbis** (Wiedemann).

A specimen from Caripito, Venezuela, is in good agreement with type but better preserved because of mild greasing of type which accentuates the red of abdomen; cell  $R_5$  is closed at wing margin but not short petiolate as in type. Scutellums and femora reddish. The type of synonym *T. senior* Walker also agrees including cells  $R_5$  closed at wing margin, though the antennae are broken.

None of the above were included in Barretto's (1949) review but have obvious relationships, though whether assignment to *Chelommia* Enderlein or *Chelotabanus* Lutz at the generic or subgeneric levels is proper, remains to be settled. His *C. amazonensis* may be a variant of *C. albibarbis* as suggested by Fairchild (1956), and appears to differ chiefly in more slender plate with longer tooth, slightly thicker palpi, and uniformly infuscated wing.

Four females, taken by Schlinger and Ross at Pucallpa, Peru, with *T. basivittus*, differ from the Venezuela homotype of *C. albibarbis*, only in moderately narrowed rather than closed cells  $R_5$ , black, not reddish, frontal keels, and darker scapes, pedicels and palpi. The notums and scutellums are slate-gray to blackish with brownish tinges on the edges; much of the notums and

all of the scutellums are reddish in typical specimens of *C. albibarbis*. Nevertheless, the shapes of frons, antennae, and palpi, and close agreement in abdominal patterns above and below suggest these to be no more than subspecific differences. Infuscation of the wings, accentuated subcostally and along vein margins, is the same. The pale hairs of the venter are confined to narrower sublateral stripes which widen along the incisures, and the hind tibiae are entirely black-haired with heavy outer fringes.

One is denuded, which, if a few white, scattering hairs on abdomen were overlooked, might be confused with *T. discus* Wiedemann also with worn abdomen, as Krober may have done, but the more uniformly tinted wings, dark beard and pleural hairs, and red antennae of *T. discus* should be distinctive.

#### Family PELECORRHYNCHIDAE

The following have been transferred to a family of their own, the Pelecorrhynchidae, but are in the literature as Tabanidae.

#### ***Pelecorrhynchus xanthopleura*** (Philippi).

This striking species from Chile has not been recorded since the original inadequate description about which there has been some doubt on account of the variability of hair color in such species as *P. elegans* (Philippi). However, comparison with specimens of *P. longicauda* (Bigot) leaves little doubt that one of each sex has recently been received in material from Chile which permits augmenting description.

Female, 20 mm. Agrees with *P. longicauda* closely in large, blackish appearance, with two admedian notal lines, squamal tufts, and the wings almost orange, head relatively small, and front a little taller than wide. The terminal, abdominal segments can obviously be extended as in *P. longicauda*. The lateral, transverse, gray streaks on sternite 2 agree also, but those on tergites 2 and 3 are much smaller and round, less than the diameter of the hind tibiae. The beards, propleural and notopleural tufts are bright, golden yellow. In Michigan State University from "Pitrufquen," Feb. 21, 1955, Neiva.

The presumed male in CAS from 50 km. E. San Carlos, Nuble, Dec. 26, 1950, Ross and Michelbacher, differs only in small spots on segments 2 to 4 above and below. The eyes are barely contiguous.

#### ***Pelecorrhynchus vulpes*** (Maequart).

The male has not been described and one in Michigan State University from Angol, 29.xi.1958, A. Urjate (?), can be designated as allotype. Length, 17 mm. Unicolorous orange-brown and robust like the female, and even more

shaggy, rufous-orange-haired. Eyes contiguous, enlarged facets well-marked and occupying the upper two-thirds with no occipital margin of small facets. Ocellar tubercle with three ocelli prominent and raised above eye level. Frontal triangle small, the antennal bases separated by a little less than their diameters from the eyes and from each other. In profile, head more rounded and face more bulging than female. Antennae and palpi about same shape and length in both sexes, palpi short and stubby, broad dorso-lateral grooves at tips of those of female. Pale creamy tufts of hairs beneath the wing bases of both. There are no described closely related species.

### SUMMARY

Described as new are the following Tabanidae: *Esenbeckia schlingeri*, *Chrysops rossi*, *Stenotabanus albilinearis*, *Stypochela inca*, *Stypommia abdominalis*, *Tabanus (Lophotabanus) lophus*, and *T. (L.) flavicorpus* (holotype females from Peru); *Stenotabanus macroceras* (holotype female from Venezuela); *Tabanus quadripunctatus amabilinus* (holotype female from Brazil (= *amabilis*, author's not Walker); *Di cladocera tinctipennis* (holotype female from Ecuador); *Dichelacera (Catachlorops) auripilis* (holotype female from Colombia); and *Stypochela neominos* (holotype female from Bolivia). *Coracella*, new subgenus, is erected for *Mesomyia carbo* (Macquart) from Chile. New synonymy includes: *Diatomineura leucothorax* Ricardo equals the older *Scaptia atra* (Philippi); *Chaetopalpus coracinus* (Philippi) equals the older *Veprius presbiter* Rondani (not of authors); *Tabanus pungens* Wiedemann is the earliest name for *T. desertus* Walker, *T. propinquus* and *T. sallei* Bellardi, and *T. angustivittus* Krober; *T. impressus* Wiedemann equals the older *T. piccus* Thunberg. Variation in and systematics including lectotype establishment of some other Neotropical species is discussed, particularly of species taken in Peru by the California Academy of Sciences Expedition.

### ADDENDUM

This opportunity is taken to call the attention to emendations which are needed in a previous paper on Neotropical Tabanidae (Philip, 1958, *Pan-Pacific Entomologist*, 34:63-76). Page 63, line, 30, distinct, not "direct"; p. 64, line 6, delete "1" in "cross veins"; p. 71, line 23, correct "*Listraphia*"; p. 75, replace line 25 with ". . . tergite 2 than on the following three tergites. The other two . . ."; p. 76, line 25, complete "General . . .," and line 41, replace "*Chaetopalpus annulicornis*" with *Tabanus anachoreta*.

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